



UNITED STATES PATENT AND TRADEMARK OFFICE

HD

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

|            |            |                    |           |      |
|------------|------------|--------------------|-----------|------|
| 10/697,848 | 10/30/2003 | Douglas L. McMakin | 50005-145 | 9762 |
|------------|------------|--------------------|-----------|------|

32215                      7590                      08/01/2007  
KLARQUIST SPARKMAN, LLP  
121 SW SALMON STREET, SUITE 1600  
ONE WORLD TRADE CENTER  
PORTLAND, OR 97204

|          |
|----------|
| EXAMINER |
|----------|

ALSOMIRI, ISAM A

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3662

|           |               |
|-----------|---------------|
| MAIL DATE | DELIVERY MODE |
|-----------|---------------|

08/01/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/697,848

Applicant(s)

MCKIN ET AL.

Examiner

Isam Alsomiri

Art Unit

3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1)  Responsive to communication(s) filed on 07 May 2007.
- 2a)  This action is FINAL.                      2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4)  Claim(s) 1-41 is/are pending in the application.  
4a) Of the above claim(s) 21-26, 28-31, 34 and 35 is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-20, 27, 32, 33 and 36-41 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on 30 October 2003 is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All    b)  Some \*    c)  None of:
1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 050707.
- 4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5)  Notice of Informal Patent Application (PTO-152)
- 6)  Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-12, 14-20, 32, and 36-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheen et al. US005859609A in view of Yuki US006057761A.** Referring to claim 1, Sheen discloses in figures 2 an array to define an interrogation region therebetween, the array being structured to turn about the interrogation region to interrogate a person in the interrogation region with electromagnetic radiation at one or more frequencies in a range of about 200 MHz to about 1 THz to provide corresponding interrogation signals (see col. 4 lines 14-15); and one or more processors operable to establish data corresponding to a topographical representation of the person determined from the interrogation signals and generate an output as a function of the data (see col. 9 lines 35-39), the topographical representation comprising a generating three-dimensional image of a target (col. 5:31-34) which reads on the plurality of voxels that define a volume of the person in the interrogation region; a device responsive to the output to provide an indication to an operator if the person is suspected of carrying one or more concealed objects that pose a threat to security (see figure 1). Sheen teaches only one array that rotates around the target for the interrogation. Yuki teaches a similar system for interrogating a target

Art Unit: 3662

using two arrays 16, 18, and the target rotates around the two target for quicker scan. It would have been obvious to modify Sheen's system to include two arrays spaced apart as in Yukl, and to rotate the arrays around the target in half the time a single array takes; therefore, obtaining quicker full scan of the target.

Referring to claim 2, the combination of Sheen and Yukl teaches the arrays are each provided with a panel and a mechanism to move a corresponding one of the arrays along a curvilinear path about the interrogation region.

Referring to claim 3, the combination teaches the curvilinear path approximates an arc of a circle.

Referring to claim 4, the combination is silent about the panel for each of the arrays is at least partially transparent to facilitate viewing therethrough by an operator. However, having a partially transparent panel is very well known. It would have been obvious to modify the combination to use the claimed panel for monitoring the interrogation or the person inside the system.

Referring to claim 5, the combination teaches the device includes a display and the one or more processors include means for generating the output in a form representative of one or more cross sectional views of the person (see figure 1-2).

Referring to claims 6, 10, 16-17, the combination teaches the arrays are each structured to operate at several different frequencies (see Sheen col. 2 lines 30-33) and each inherently correspond to an arc about the interrogation region subtending an angle of at least 120 degrees.

Art Unit: 3662

Referring to claims 7, the combination teaches the one or more processors are operable to generate the data by combining data sets corresponding to a number of different cylindrical images and the arrays are each structured to provide a semi-cylindrical scan (see col. 2 lines 27-30).

Referring to claims 8, 15, 32 and 36, Sheen discloses in figures 2 an array to define an interrogation region therebetween, the array being structured to turn about the interrogation region to interrogate a person in the interrogation region with electromagnetic radiation at one or more frequencies (see col. 2 lines 30-33) in a range of about 200 MHz to about 1 THz to provide corresponding interrogation signals (see col. 4 lines 14-15); and one or more processors operable to establish data corresponding to a topographical image determined from the interrogation signals and generate an output as a function of the data (see col. 9 lines 35-39); a device responsive to the output to provide an indication to an operator if the person is suspected of carrying one or more concealed objects that pose a threat to security (see figure 1). Sheen teaches only one array that rotates around the target for the interrogation. Yukl teaches a similar system for interrogating a target using two arrays 16, 18, and the target rotates around the two target for quicker scan. It would have been obvious to modify Sheen's system to include two arrays spaced apart as in Yukl, and to rotate the arrays around the target in half the time a single array takes; therefore, obtaining quicker full scan of the target. The combination teaches generating topographical representation of a person that inherently include the contour of the body (see figures 6-12), which reads on the claimed "volumetric data" from the image data

Art Unit: 3662

sets, the volumetric data being indicative of the surface of the person (see col. 2 lines 27-30).

Referring to claim 9, the combination teaches moving each of the arrays along a path positioned about the person (see figure Yukl figure 1).

Referring to claim 11, it's inherent that at least a portion of the path is rectilinear.

Referring to claims 12, 19-20, the combination teaches displaying one or more cross sectional views of the person based on the volumetric data (topographical cylindrical image data) (see col. 9 lines 35-39).

Referring to claims 14, 18, the combination teaches the arrays oppose one another to define an interrogation region therebetween and are arranged to provide a security checkpoint (see figure Yukl figure 4).

Referring to claims 37, 39, and 41, Sheen teaches one or more processors are further operable to render one or more two-dimensional images (from different viewing angles) from volumetric data (see col. 5:34-36).

Referring to claims 38 and 40, Sheen teaches using ray projection techniques (see figure 2, and the Linear Array 10).

**Claims 13, 27, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheen et al. US005859609A in view of Yukl US006057761A and Lu et al US 5,720,708.** The combination of Sheen and Yukl is silent about combining the image data sets incoherently. Lu teaches a similar system wherein the image data are combined incoherently (see col. 3 line 2 – col. 4 line 5). It would have been obvious

Art Unit: 3662

to modify the combination to further include combining the image data sets incoherently to increase the signal-to-noise ratio and to improve the quality of the reconstructed image.

### ***Response to Arguments***

Applicant's arguments filed May 7, 2007 have been fully considered but they are not persuasive. Regarding claim 1, applicant argues that ***"neither Sheen nor Yukl teaches or suggests "one or more processors operable to establish data corresponding to a topographical representation of the person determined from the interrogation signals., the topographical representation comprising a plurality of voxels that define a volume of the person in the interrogation regions" as in amended claim 1"*** (response page 10). In response: Sheen clearly teaches generating topographical representation of the person from the interrogation; Sheen recites in col. 9:35-60 "Overlapping arc segments permits viewing around corners, within depressions or other **topographical perturbations of the target**". Further, Sheen recites in col. 5:31-34 "After digitizing, the reconstruction algorithm discussed below is applied to a segment of the 360° data to reconstruct a three-dimensional image of the target from a single viewing angle"; Therefore, the "three-dimensional image of the target" clearly reads on the claimed "plurality of voxels that define a volume of the person". Therefore, the rejection of claim 1 is maintained.

Regarding claim 1, and the combination of Sheen and Yukl, applicant argues that Yukl **"do not perform any imaging, but rather measure the dielectric response of a**

Art Unit: 3662

**subject to microwaves”** to avoid privacy issues associated with the imaging techniques; and argues that **“Because Yukl teaches away from the proposed combination and because the modification proposed by the Examiner would render the Sheen system unsatisfactory for its intended purpose, it would not have been obvious to combine Sheen with Yukl in the manner suggested by the Examiner. (MPEP 2143.01 and 2145.X.D.2.) The § 103(a) rejection of amended independent claim 1 should be withdrawn for this reason as well”**. In response: Sheen teaches a system using one array that scans the person 360°, Yukl describes another system that also scans a person 360° (see col. 8:12-14). Yukl is combined to teach using two arrays to scan the target for faster interrogation (see col. 5 line 37 – col. 6 line 57). Although Yukl interrogates the target differently for privacy issues, the teaching of using two arrays instead of one is relevant to both systems of Sheen and Yukl. Therefore, one of ordinary skill in the art would have considered the idea of using two arrays as shown in Yukl for faster interrogation. Also combining both Sheen and Yukl is proper because both systems are in the same field of endeavor, which is an interrogation system, to detect if a person is carrying a concealed object. Further, applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958



Art Unit: 3662

F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the use of two arrays is better for faster interrogation.

Claims 2-20, 27, 32-33, and 36-41, have similar arguments to claim 1. (See response above)

Therefore, the rejections are maintained.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

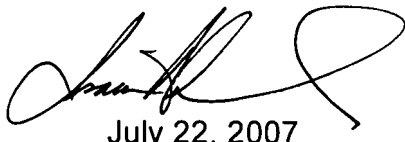
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isam Alsomiri whose telephone number is 571-272-6970. The examiner can normally be reached on Monday-Friday 8:00-5:00.

Art Unit: 3662

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Isam Alsomiri



July 22, 2007